

### ABSTRACT

A multi-user detector for use in a CDMA receiver system includes a channel tap interpolator to generate interpolated channel taps for users of interest. The interpolated channel taps occur at integer multiples of a chip period from a sampling reference point. The channel tap interpolation allows detection processing to proceed in the chip domain, rather than in the sample domain, thus reducing the complexity of the multi-user solution significantly. In at least one approach, a number of low dimensionality "virtual" users are defined based on the recursive property of the spreading sequences. Solutions may then be developed for the virtual users using conventional detection (e.g., MMSE) techniques.

"Express Mail" mailing label number: EV041119764US

Date of Deposit: November 21, 2001

This paper or fee is being deposited on the date indicated above with the United States Postal Service pursuant to 37 CFR 1.10, and is addressed to Box Patent Application, US Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202